

NEW SUBFAMILY PLACEMENT FOR SOME NORTH AMERICAN EULOPHIDAE (HYMENOPTERA, CHALCIDOIDEA)

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Abstract.—The tetrastichine genus *Parachrysocharis* Girault (Eulophidae), previously treated in North American literature as a member of the subfamily Entedoninae, does not occur in North America. The one North American species that was included in this genus, *P. semiflava* Girault, is transferred to the tetrastichine genus *Chaenotetrastichus* Graham. This is the first record of this genus from North America. The genus *Apterolophus* Gahan, previously placed in the Eulophinae (Elachertini), is transferred to the Tetrastichinae and synonymized with *Tetrastichomyia* Girault. *Tetrastichomyia orygiae* Girault is a junior synonym of *T. clisiocampae* (Ashmead) and *T. silvensis* is reinstated into *Tetrastichomyia* from *Tetrastichus*.

Key Words: first record, *Parachrysocharis*, *Apterolophus*, *Tetrastichomyia*, *Chaenotetrastichus*

In the course of independent studies in the family Eulophidae, we realized that certain North American genera have been traditionally misunderstood, either as to their proper identity, their subfamily placement, or both. This paper arose from the need to correct two such mistakes in order to facilitate the delimitation of eulophid subfamilies necessary for future work.

Genus *Chaenotetrastichus* Graham

Chaenotetrastichus Graham, 1987: 25.

Type species: *Tetrastichus grangeri* Erdős (original designation).

The genus *Parachrysocharis*, described in the Entedoninae by Girault (1913), recently was characterized and discussed by Bouček (1988), who transferred it to the Tetrastichinae. It presently contains only the type species, *P. javensis* Girault (1913), previously treated under the name *Tetrastichus*

pyrillae Crawford, which is a parasite of *Pyrilla* eggs in southern Asia. Girault (1917) described a North American species in the genus *Parachrysocharis*, *P. semiflava*. This species clearly does not belong in the genus *Parachrysocharis*, which is very distinct due to the unique longitudinal striations on the mid lobe of the mesoscutum (see Bouček 1988). Girault's North American species has been treated in the Entedoninae in all catalogues since its description (Peck 1951, 1963, Burks 1979). Examination of the types of *P. semiflava* showed us that it actually belongs in the recently described tetrastichine genus *Chaenotetrastichus* Graham (1987). This genus was known previously only from Europe.

The genus *Chaenotetrastichus* was described based on a single European species, *Tetrastichus grangeri* Erdős. Diagnostic characters for the genus, given in the text and in the generic key presented in the same work (Graham 1987), are as follows: sub-

marginal vein with 1 dorsal seta; scutellum with 5–6 pairs of setae; mandible with a long, falcate outer tooth and two very small, closely approximated inner teeth; dorsal surface of thorax dull, with raised reticulation; mid lobe of mesoscutum without a median line, with 2–3 irregular rows of long, erect setae on each side; dorsal surface of gaster wholly, finely reticulate; body brightly metallic green to blue-green.

Parachrysocharis semiflava Girault belongs in the genus *Chaenotetrastichus*, although it differs in several key characters (based on *grangeri*). The scutellum only possesses 3–4 pairs of setae; the mesoscutum only has 1 row of 3–4 setae along each lateral margin (in both species the setae on the mesoscutum and scutellum are long, whitish, and semi-erect); the gaster is distinctly reticulate on the first tergum, but only faintly reticulate after that; the body is metallic green dorsally, yellow ventrally. Otherwise, it matches the diagnosis of *Chaenotetrastichus* well, particularly the peculiar mandible shape, which is unique to this genus, the single seta on the submarginal vein, and the distinct reticulation of the thorax.

Chaenotetrastichus presently contains two species:

C. grangeri (Erdős). *Tetrastichus grangeri* Erdős, 1958 (1957): 286–287. Holotype ♀, FRANCE, Chartrettes, 11.vi.1950, C. Granger.

C. semiflavus (Girault). **NEW COMBINATION.** *Parachrysocharis semiflava* Girault, 1917: 129. Lectotype ♀ (present designation), TEXAS, Austin, 16.viii.1909, C. Hartmann [USNM type no. 20803, examined].

The lectotype ♀ of *C. semiflavus* is mounted on a point and has been labelled as lectotype. The USNM collection also contains a female paralectotype with the same data as the lectotype and a slide on which Girault mounted a head and several pieces of a body from a third specimen. The rest of this specimen is missing.

Genus *Tetrastichomyia* Girault

Tetrastichomyia Girault, 1916a: 48.

Type species: *Miotropis clisiocampae* Ashmead, 1894 (original designation).

Apterolophus Gahan, 1919: 3–4. **NEW SYNONYM.**

Type species: *Apterolophus pulchricornis* Gahan (original designation).

The type species of *Apterolophus* was set through original designation, not monotypy as stated in North American catalogues (Peck 1951, 1963, Burks 1979).

Girault (1916a) described the genus *Tetrastichomyia* based on the single species *Miotropis clisiocampae* Ashmead. He later described two more species in this genus, *T. orgyiae* and *T. silvensis* (Girault 1916b). These three species were subsequently assigned to *Miotropis* Thomson by Peck (1951) when he synonymized *Tetrastichomyia* under *Miotropis* and later were transferred to *Syntomosphyrum* (Burks 1967, 1979). Graham (1987) provided a key to European genera of Tetrastichinae, in which he resurrected the genus *Tetrastichomyia*, and presented the following diagnostic characters: dorsellum divided medially by a groove or ridge; propodeum with a sharp carina on the callus, raised reticulation with rugosity or wrinkles, and a small spiracle; third anellus larger than the preceding two and setose (at least in European and North American species); scutellum without submedian lines, sublateral lines deep with lateral edge carinate; vertex with transverse ridge posterior to ocellar triangle; lower edge of antennal toruli level with ventral edge of eyes; mid lobe of mesoscutum without medial line; frons without transverse suture.

Gahan (1919) described the genus *Apterolophus* in the subfamily Elachertinae (now considered the tribe Elachertini of the Eulophinae). It has since been maintained in Eulophinae, even though at the time of its description Gahan mentioned its close sim-

ilarity to *Miotropis clisiocampae* Ashmead, which has since been transferred to the Tetrastichinae. Our studies indicate that *Apterolophus* is indeed a tetrastichine, and we are assigning it to this subfamily, where we are synonymizing it with *Tetrastichomyia*, a genus based on the species *M. clisiocampae*.

Examination of *Apterolophus pulchricornis* Gahan, the type species and only included species in the genus *Apterolophus* Gahan, shows that it agrees with all the key characters given by Graham. It differs from other species in *Tetrastichomyia* in that the female is brachypterous. The male is unknown.

At present there are three North American species placed in the genus *Tetrastichomyia*:

T. clisiocampae (Ashmead). *Miotropis clisiocampae* Ashmead, 1894: 341. Lectotype ♀ (present designation), WEST VIRGINIA, Morgantown, 28.vi.1891, A. D. Hopkins, ex. *Clisiocampe americana* on apple [USNM type no. 2183, examined]. As the type of *Tetrastichomyia*, this combination was revived through implication by Graham (1987: 28) when he resurrected the genus *Tetrastichomyia*.

T. orgyiae Girault, 1916b: 112. **NEW SYNONYM.** *Tetrastichomyia orgyiae* Girault. Holotype ♀, WASHINGTON, D.C., xi.1915, R. M. Fouts, ex. *Orgyia leucostigma* [USNM type no. 20399, examined].

T. orgyiazele Burks, 1979: 1005. **NEW SYNONYM.** Unnecessary replacement name. Burks (1979) assigned *Syntomosphyrum orgyiazele* as a replacement name for *Tetrastichomyia orgyiae* Girault (nec *Syntomosphyrum orgyiae* Ashmead) when he transferred *T. orgyiae* Girault to *Syntomosphyrum*.

T. pulchricornis (Gahan), **NEW COMBINATION.** *Apterolophus pulchricornis* Gahan,

1919: 3–4. Holotype ♀, NEW YORK, Leeds, viii.1918, W. M. Mann [USNM type no. 21910, examined].

T. silvensis Girault, **REVIVED COMBINATION.** *Tetrastichomyia silvensis* Girault, 1916: 111. Holotype ♀, MARYLAND, Glendale, 16.vii.1915 [USNM type no. 20398, examined]. This species was described in 1916, in the same paper as *orgyiae*; however, the date of publication has been incorrectly given as 1919 in North American catalogues (Peck 1951, 1963, Burks 1979).

The lectotype of *clisiocampae* Ashmead is point mounted on a pin with three other specimens (paralectotypes) of the same species. The lectotype point has been marked with a black dot to indicate the proper specimen and a lectotype label has been added to the pin.

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